

Date: Tue, 11 May 93 10:14:12 PDT
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V93 #568
To: Info-Hams

Info-Hams Digest Tue, 11 May 93 Volume 93 : Issue 568

Today's Topics:

 ATV xmitter questions
 Cellular Scanner (tracking calls)
 DXing in Guatemala: equipment advice sought
 Experience with Ramsey kits?
 G5RV
 G5RV - A Rip Off
 Ramsey Kits
 Transmitter low pass filters

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 11 May 1993 08:15:45 -0700
From: olivea!gossip.pyramid.com!sword.eng.pyramid.com!andrem@uunet.uu.net
Subject: ATV xmitter questions
To: info-hams@ucsd.edu

I've got a few questions with regards to an ATV transmitter
that I've gotten my hands on. The boards are made by PC
Electronics, and the identifier of the video board is TXA5.

The ARRL Handbook covers the TXA5 in it's section on ATV.
I have a few questions after reading through the description
and looking at the specs for the power amplifier used in this
application. Hopefully someone who's familiar with this design
can help me out.

The transmitter is intended for use in the 420-440 MHz range, and uses a Motorola MHW710-2 as the power amplifier. Motorola's specifications, however, indicate that this is not the correct part for this frequency range. The data book lists the MHW710-2 as being intended for use from 440-470 MHz. For 400-440 MHz, a MHW710-1 is specified. Can anyone tell me why the -2 part is used in this design rather than the -1? I plan to use the transmitter at 434.0 MHz.

I also have a question regarding the output level of the TXA5 board. The ARRL Handbook indicates that the board provides a 80mW signal to drive the power amplifier. The specs for the power amp list a maximum input level of about 250mW, with a typical input of 150mW. Why is the TXA5 only driving the power amplifier at only a little better than half of the "typical" level specified for the device?

Words of wisdom with regards to this beast would be appreciated.

```
+-----+
| Andre Molyneux    KA7WVW      "Insert your favorite disclaimer here" |
+-----+-----+
|      -===== PYRAMID TECHNOLOGY CORP |Internet:      |
|      -===== 3860 N. First Street   | andrem@pyramid.com |
|      -===== San Jose, CA          |Packet:          |
|-----===== (408) 428-8229         | ka7wvvn0ary.#nocal.ca.usa.na |
+-----+-----+
```

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-----
Date: Mon, 10 May 93 18:44:09 GMT
From: btree!bly@network.UCSD.EDU
Subject: Cellular Scanner (tracking calls)
To: info-hams@ucsd.edu
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In article <C6o38w.1Dv@ms.uky.edu> hgpeach@ms.uky.edu (Harold Peach) writes:
>rc@cmr.ncsl.nist.gov (Robert Carpenter) writes:

```
>
>
>>section of the Washington Post:
>> "..... [House] Subcommittee [on telecommunications and finance] members
>>saw a newly purchased off-the-shelf cellular telephone become a 'scanner'
>>capable of picking up cellular conversations around Capitol Hill.
>
>I keep seeing references to this being done. A similar article was posted
>to one of the other groups recently talking about how two guys interfaced
>a computer to a cellular phone and used it to track the calls and even location
>(to the nearest cell site) of local cell phone users.
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>
>How is all this done? Can these things be unlocked just from the number
>pad or is more involved? Do cell phones already have a computer interface
>built-in or did these guys have to invent one?
>
>If anyone has details on this stuff, please post.
>

No details, but here is the jist. Many cellphones can be put into a "service mode" from the keypad. This mode often includes a scanning feature or the ability to dial in a freq for listening or xmitting. This info is usually not avialable in the user manual, but I got the info for my phone from the shop where I bought it. On my phone (DiamondTel 22x) all the user programming and memories are lost if you put it into the service mode.

I don't believe the hand-off codes, etc. are hard to figure out. I'm sure they are published. A good lit. search should find articles.

In normal operation, the cellphone scans a band of control channels for the strongest cell. These signals are low baud digital FSK which contain carrier ID, cell ID, etc. When a call is placed or received, a communications channel is assigned via the control channel and the phone. Calls are handed off from cell to cell (and channel to channel w/in a cell) by a short FSK burst containing the new channel number, cell number, etc. You can hear these hand-off bursts with a scanner about 2 seconds before hand-off. The cellphones themselves don't pass the audio burst, you just hear an annoying 1/2 second loss of audio.

The kind of digital interface to cellphone you want is rare. Most people use a scanner. With a digital interfacing scanner, audio FSK decoder, and computer, it is simple to write the software that follows a call from channel to channel and cell to cell. This would also tell you the location of the caller (which cell he is in).

I'm sure there are some cellphone phreaks here who could provide more info including the structure of the digital control messages. I'm all ears! Of course all this is totally illegal, but harmless fun.

Roger Bly (ka6mwt)
bly@brooktree.com

Date: Tue, 11 May 1993 13:41:31 GMT
From: dog.ee.lbl.gov!overload.lbl.gov!agate!howland.reston.ans.net!gatech!kd4nc!
ke4zv!gary@network.UCSD.EDU

Subject: DXing in Guatemala: equipment advice sought
To: info-hams@ucsd.edu

In article <gj169883.737046269@cunews> gj169883@alfred.carleton.ca (gj student 169883) writes:

> I will be spending a year in rural Guatemala and am hoping to take a
>rig down with me to stay in contact with people back in Canada. As I
>will be in a rural location I will need to be able to use batteries or
>generators as a power supply; further, I would like to be able to
>receive general shortwave broadcasts to keep up to date with the news.

>

> As I currently don't know much about DXing I have some questions
>about the equipment that I will need (for example, will it be better
>for me to try to be in direct contact with Canada or should I patch
>into phone lines? Should I be looking into packet technology?); any
>advice that you can provide will be appreciated.

Colin, I would recomend the IC-735 as the radio for your use. It is compact, works off 12 volts DC, and can be easily run at reduced power when running off batteries. It has general coverage receive, and the receiver section of the radio is excellent. It can do 100 watts if necessary, and it's heatsink design is also excellent which can be important in the tropics.

If direct voice contacts are what you want, the 10, 15, and 20 meter bands will normally be your choices. You follow the MUF as closely as you can for best results. Even though 10 meters is dying as a worldwide band, the propagation North-South will remain good often enough to be the band of choice many days. 40 meters is a bit of a zoo, but would likely work in the evenings, and 80 meters may be usable later at night in winter. If you wish to use the digital modes, 30 meters is an attractive alternative. The IC-735 covers all of these.

If you're going to be in a fixed location where you can put up large wire antennas, or a quad, you'll be in good shape. If you are moving about a lot, improvised wire antennas, or a vertical whip along with the Icom automatic antenna tuner would be a good choice. At the simplest, a roll of wire and a manual tuner will allow you to improvise an effective antenna anywhere you can find supports (trees).

If you wish to use packet, you need more equipment. You'll need a TNC and a computer or terminal. Considering the power situation, you may want a CMOS TNC like Paccomm makes, and a laptop. You can press things like a HP-95 into packet service, and you can use things like the Baycom modem, but you'll get better results with a system optimized for HF. Off the shelf that usually means the PK232 or the KAM.

Be aware that HF packet is *slow* and often requires many repeats.
It's good for passing mail type messages between patient machines,
but is very much less attractive for interactive conversations.
It can be just the ticket for keeping in touch with someone back
home who can't meet you on the air, however.

Phone patches on HF are sometimes workable. I'll leave the legalities
to someone aware of the third party rules between Canada and Guatemala.
I think it's OK, but don't accept my word on it. The major problem with
phone patches is finding a patch partner on the other end who will be
willing to work with you day after day. Such people exist, but hooking
up with them is rather hit or miss.

The other sticky issue is licensing in Guatemala. Since there has been
guerrilla activity in the country, it may be somewhat difficult to get
permission to setup ad hoc stations in the rural areas. It may also not
be safe if you are mistaken for CIA. :-(

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: 11 May 93 11:48:14 EDT
From: world!ksr!jfw@uunet.uu.net
Subject: Experience with Ramsey kits?
To: info-hams@ucsd.edu

ez006683@othello.ucdavis.edu (Daniel D. Todd) writes:

>gumaer@merlin.etsu.edu (Mark W. Gumaer) writes:

>: My father bought a 6m ramsey receiver kit about a month ago. To his
dissatification he found that the resisters were not the right ones. Also, he
>: noticed that all the parts were not included in the box.
>You didn't say, did you call ramsey and try to resolve the problem with
>them? I've never purchased one of their kits but would certainly try to
>make a call if there was a problem. If you did call how were you treated.

My experience with Ramsey: my CT-70 frequency counter was missing some 1uF
capacitors and a couple of resistors, and came with a micro-T case transistor
replacing an MRF-910 (I think it was); there was no description of the pinout
of the substitute transistor. I called them on the phone, told them what was
missing, and asked for a pinout to know how to plug the transistor in. (I
also mentioned that it seemed poor practice for them to use 1uF electrolytics
to bypass an RF circuit!). They sent the replacement components, but no

instructions -- in fact, they sent **another** oddball transistor (same type). I then assembled the kit using 1uF monolythics from my stockpile and a genuine MRF910 transistor after discovering that the micro-T transistor just didn't fit after bending the leads carefully enough not to break them...

Once that was done, it works well enough, but (1) it's very prone to internal oscillations on the higher frequency settings, (2) the battery holder inside is to be secured with double-sticky tape, which doesn't hold for long, and (3) the batteries don't tend to last long (not necessarily their fault, but perhaps they should have designed around C cells instead of AA). Also, when running from batteries they feed the +6V directly to TTL, which is not recommended for long life (I use a series Si diode to drop the voltage).

I gather that a lot of Ramsey kits fall in the "Well, it works well enough, I suppose, but gee it would have been easy to do better" category.

Date: 11 May 93 16:29:17 GMT
From: news-mail-gateway@ucsd.edu
Subject: G5RV
To: info-hams@ucsd.edu

| Date: 10 May 93 15:16:26 GMT
| From: news-mail-gateway@ucsd.edu
| Subject: G5RV: How does it work and perform?
| To: info-hams@ucsd.edu
|

| I know a G5RV is a multi-band dipole-like antenna but that is about
| all I know about it. I have seen other interesting discussions about
| antennas here. I'd like to see one on the G5RV. What bands does it
| cover for what lengths of wire? (obviously one could scale it) How
| does it work theoretically? How well does it work practically? Are

I have been using on on HF for about a year. It works well on 10,15,20,40 & 80 meters but not at all on 160 (I don't have WARC bands). I couldn't even ground wave 5 miles on 160. I use a tuner, my g5rv is about 102 ' long and the middle is up about 40 ' and the ends are up about 15-20'. Mine has a balun at the end of the coax feed. I run an FT101ZD barefoot and have worked around the world. It is sort of frustrating, because it appears to be fairly directional and you don't just go out and rotate it around! It also doesn't do too well in a pileup, (except on 10 but then so would a bed spring!).

| there good ones and bad ones? What does it take to make a good one?
| How does it compare to a trapped dipole?
|
| I just got Hf privileges (in one easy test) and want to try out the HF
| bands relatively cheaply. I have a borrowed HF transceiver but need

| some reasonable antennna for it. The wire hanging out my window
| receives ok but the tuner doesn't like it much.
|
| TNX es 73 de N1MWY/AE
| Carl
| hayssen@sceng.ub.com

--

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55 Lake Avenue North	-. .----- -. - -. - -. - .- .-
Worcester, MA 01655	

Date: 11 May 93 15:44:53 GMT
From: auratek!epacyna@uunet.uu.net
Subject: G5RV - A Rip Off
To: info-hams@ucsd.edu

While this is a popular antenna, numerous untruths and false claims have been propagated regarding its operation. The G5RV has no magical attributes. Even the article in the ARRL Antenna Compendium has many falsehoods. The G5RV is a 3/2 wave antenna on 20M where it presents a reasonable match to a 50 ohm system. On all other bands there is considerable SWR, and an antenna tuner must be used. The 34' section of open line does not entend the antenna lenght on 80M, or function as a proper matching section to match a 50 ohm system on the other bands. Those who have low apparant SWR's are simply using a long run of lossy coax to mask the high SWR and wasteing power. Not only should coax not be used, and never use a ferite balun in high impedance circuit (very lossy).

For a limited space, 80 - 10M antenna , its more efficient to center feed the 102' horizontal with just ladder line all the way to the tuner. The tuner should be of the unbalanced to balanced type (i.e. Johnson Matchbox). Most of the commerical tuners are of the unbalanced type (L or T networks) and and fake it by hanging a lossy balun on the high Z output. Also the balun should be configured to produce equal current (not voltage as most do). Alternatively, you can build a balanced tuner and put a current balun on the low Z side as shown below.

	-----Variable Inductor-----	
Trans-	Unbal.	Variable
	to bal.	Balanced

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mitter      current      Capacitor      Antenna
  |          balun
  |          -----Variable Inductor-----
  |
Ground

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Note: Inductors are gang tuned. Balun is short length of coax with a lot of ferite beads over outside, or a length of coiled coax.

But you say I use a G5RV (or worked many others that use them) and they seem to work. Sure they work, but with compromise. Here's an example. Every time you half power, your signal reduces by 3 dB. So reducing your power to one quarter reduces your signal by 6 dB (or 1 S unit). So the average 100W station with 75% of the power going into losses will only be 1 S unit weaker. For casual operation, who cares. If you're a QRP'er, contesteer or chase DX, that one S unit makes all the difference in the world. Why pay for and install things that reduce your signal or can damage your expensive equipment (what happens when a misused balun burns up)?

Walt Maxwell in his book Reflections published by the ARRL is a must reading. His treatment on SWR, Baluns and the G5RV is lucid.

73's

Ed W1AAZ

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Date: 11 May 93 17:34:10 GMT
From: news-mail-gateway@ucsd.edu
Subject: Ramsey Kits
To: info-hams@ucsd.edu

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>> He will not buy another Ramsey.
>You didn't say, did you call Ramsey and try to resolve the problem with
>them? I've never purchased one of their kits but would certainly try to
>make a call if there was a problem. If you did call how were you treated.

I have purchased and built the Ramsey FTR-146, FX-146, and FX-440. There were minor problems with each kit, too many or too few parts. If it was a five cent resistor missing, I just picked it up at Radio Shack. But for things like a varicap or a pot missing, Ramsey responded immediately with replacement parts and an apology. The Ramsey FX kits have a distinct advantage over anything from Japan. They can be EASILY interfaced to a microcontroller or a personal computer. Given that, you can make them do everything a Japanese transceiver can do and then some...KG7BK

Cecil_A_Moore@ccm.hf.intel.com at Internet_Gateway

Date: Tue, 11 May 1993 13:51:47 GMT
From: dog.ee.lbl.gov!overload.lbl.gov!agate!howland.reston.ans.net!gatech!kd4nc!
ke4zv!gary@network.UCSD.EDU
Subject: Transmitter low pass filters
To: info-hams@ucsd.edu

In article <C6trAD.GF3@scr.siemens.com> dep@scr.siemens.com (David Post) writes:

>Hi

>

>I am new to HF and I am in the process of setting up an HF
>station. During some of my tests I have experianced TVI and
>I want to get a low pass filter for my rig. I have been given
>a few recomendations (B&W, Bencher, and ICE). Does anybody
>have any experiance with these manufactures? What is a good low pass
>filter manufacturer? What specifications should I look for if I want to
>operate 80 - 10 Meters with this low pass filter
>in the transmission line? What should the cutoff freq. be?
>What kind of antenuation should a good filter have at 50 Mhz?
>what should the insertion swr be?
>How much power should the filter handle assuming I want to run
>the legal limit some day? What are the trad offs on these paramiters?

Lots of questions Dave. I've used the B&W filter, it will handle the legal limit with low VSWR loads. It's important that you bond the filter to the transmitter chassis for best results. Using it freestanding in the line will often do little to suppress harmonics, they'll happily flow *around* the outside of the filter due to induction. The insertion VSWR will be low, but for best results you want the filter to be looking into the proper impedance. That usually means you mount it between the transmitter and the antenna tuner. You should be able to obtain 30 db of suppression at 50 MHz. A good tuner will often double as a low pass filter, depends on the network design, and will add to that suppression.

It should be noted that it's rather rare for good quality commercial transmitters to have strong harmonic output. It may well be that the TVI you are suffering is not harmonic radiation, but rather fundamental overload in the affected TV. A low pass filter won't help this problem. A high pass filter on the offending TV may help, as will orienting the respective antennas so that they are not in each other's near fields.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary

534 Shannon Way	Guaranteed!	emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244		

Date: Tue, 11 May 93 15:17:13 GMT
From: walter!porthos!dancer!whs70@uunet.uu.net
To: info-hams@ucsd.edu

References <930425.131406.1I8.rusnews.w165w@garlic.sbs.com>,
<C65wID.Lvn@ucdavis.edu>, <2284@indep1.UUCP>
Subject : Emergency preparedness, was...Re: no-code defense

In article <2284@indep1.UUCP> clifto@indep1.UUCP (Cliff Sharp) writes:
> Let's try a scenario. The "big one" his Los Angeles. No power, no
> repeaters, most equipment is junk, no transportation, no phones, no
> communications. While you're still trying to figure out how to modulate
> a carrier, I'll be on the air, with a LEGAL transmitter in a LEGAL ham
> band, communicating with the outside world, because I can design, build
> and power a CW transmitter/receiver... and I can use CW.

Let me see if I can fully understand this. The "big one hits" and your the only one with communications capability because you're going to build your own CW transceiver and then use it to talk to the world. Indeed, if all the equipment is rendered junk, by what stroke of luck do you presume your home will be spared, AND if it isn't spared, how do you propose to build your CW rig (e.g. assemble AND power the your home made CW rig?

Let me suggest, that while you're building your rig, that the many other "appliance" operators out there will already be providing emergency communications with equipment powered by battery, mobile installations, etc. in many cases using repeaters installed with UPS (uninterrupted power supply) capability, etc.

Unfortunately, your suggestion about "the big one" indicates (at least to me) that you have little knowledge of the extensive emergency communications capabilities of the many governmental agencies (police, fire, etc.), the telephone company (something I'm reasonably knowledgeable of) and the ham community at large (especially those involved with RACES).

Interestingly, and I pose this as a comment and general question to others in this newsgroup, I'm unaware of any CW practice drills being done within my local (Morris County, NJ) RACES area. Are there any RACES groups which do any type of CW operation as part of their emergency preparedness drills and/or practice sessions?

PLEASE DIRECT ALL RESPONSES ONLY TO rec.radio.amateur.policy

Standard Disclaimer- Any opinions, etc. are mine and NOT my employer's.

Bill Sohl (K2UNK) BELLCORE (Bell Communications Research, Inc.)
Morristown, NJ email via UUCP bcr!cc!whs70
201-829-2879 Weekdays email via Internet whs70@cc.bellcore.com

Date: Tue, 11 May 93 15:08:31 GMT
From: dog.ee.lbl.gov!overload.lbl.gov!agate!headwall.Stanford.EDU!
nntp.Stanford.EDU!umunhum!paulf@network.UCSD.EDU
To: info-hams@ucsd.edu

References <1993Apr25.140637.14242@anomaly.sbs.com>,
<27APR199306472589@nssdca.gsfc.nasa.gov>, <2283@indep1.UUCP>um
Subject : Re: no-code defense (really: learning morse code)

My own personal observation is that there must be a million ways to *mislearn* morse code, and only a dozen or so ways that really work. A few hints:

1. The professional psychological work in the field indicates that the primary predictor of morse code learning prowess is mental attitude; if you think it's going to be tough, it will be. Yes, this does sound like the typical hoey we get from psych studies, but in my observation, it seems to hold.
2. Map sounds, not bits. This was my mistake for many years. It seems so trivial, but it makes sense from a recognition theory point of view. Don't, for example, memorize C as "dash dot dash dot", but as "dah-dit-dah-dit"; note that you're "chunking" four items in the former method, but only one in the latter.
3. Use subconscious formulation. No, I'm not talking about those "attitude adjustment" tapes that you can buy through most ham magazines (although they probably do have some effect, see #1), but instead using the SC process in your favor. For example, while hacking away in the shack, keep the radio tuned to 7.100 MHz, or some other constant morse source. Remember, you're trying to get acquainted with the *sounds* associated with morse code. Just here and there, pick out a letter and recognize it. (Thanks to WA6AZP for this suggestion.)
4. Use your commute time. If you spend more than ten minutes each way commuting, you have at least 20 minutes per day, every day, for some practice. Just record a tape, using some of the computer generation programs, slightly above the goal rate. Pop it in the cassette deck, and drive. Now, perform the same technique as in #3 above, periodically recognizing bits of the tape. This technique, aside from guaranteeing

regular practice, teaches you to divide you attention between the code and something else (driving, but also writing).

Much of this process is purely psychological, which is why taking morse as a class, with a few others for support, and somebody who knows how to teach, works so well.

--

-=Paul Flaherty, N9FZX | "Just name a hero, and I'll prove he's a bum."
->paulf@Stanford.EDU | -- Col. Gregory "Pappy" Boyington, USMC (ret)

Date: Tue, 11 May 1993 16:36:35 GMT
From: dog.ee.lbl.gov!overload.lbl.gov!agate!howland.reston.ans.net!
zaphod.mps.ohio-state.edu!uwm.edu!linac!newsaintmail@network.UCSD.EDU
To: info-hams@ucsd.edu

References <1s9kgd\$a81@network.ucsd.edu>,
<1993May7.152237.27064@nnnnpd2.cxo.dec.com>, <1993May07.231244.218@anomaly.sbs.com>
Subject : Re: no-code defense

Rev. Michael P. Deignan bleats:

>
> But, we are. That's why we're in the Rhode Island 2x2 Amateur Repeater
> Association, and you are not. Unless, of course, you wish to pay the
> \$4,000 no-code membership fee, submit the 5,000 word essay on why you
> want to be a member, and take the 100 question oral examination on
> license-class relevant information from Part 97 and the ARRL
> handbook.
>
> But, as is consistent with your type, I'm sure you just memorized the
> question pools, and really don't remember all that much about "theory"
> anyway...

No code or not, I would never even consider joining an elitest organization such as yours. That attitude is contrary to virtually everything that Ham radio is all about. May your organization die a painfull death due to a lack of new members.

```
=====
[ Mark E. Levy, N9RXF                |                               ]
[ BitNet:  LEVY@FNAL                 | Unix is to computing          ]
[ Internet: LEVY@FNAL.GOV            | as an Etch-a-Sketch is to art. ]
[ HEPnet/SPAN: FNALD::LEVY (VMS!)   |                               ]
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End of Info-Hams Digest V93 #568
